MANUAL REVISION INSTRUCTIONS

Date: 7/28/89

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Revision Release No.: 1

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Questions about this release should be directed to Harold Lachmann (H4-50), 6-1143.

E. M. Schroeder, Manager
Management Standards
E. M. Schroeder
Date 7-28-89

I have personally received the revisions identified for release in this package and assume full responsibility for updating my manual in accordance with instructions.

[illegible] Thurman, Manager
Document Control
Date 7/28/89

Custodian

Date

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TITLE:

NEW AND MODIFIED FACILITIES

Approved by

R. E. Lerch, Manager
Environmental Division

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1.0 PURPOSE

The purpose of this Part is to assure compliance with the environmental requirements applicable to the construction of new facilities or the modification of existing facilities.

2.0 SCOPE

The provisions of Part Q apply to all new facilities and facilities that are being modified on the Hanford Site that are under the jurisdiction of WHC.

3.0 RESPONSIBILITIES

1. Project Management shall:

   a. Design new and modified facilities in compliance with this manual. Decommissioning features shall be identified during the facility planning and design stage.

   b. Request Environmental Engineering and Technology to provide an environmental evaluation, environmental assessment, or environmental impact statement and/or, if State approvals or permits are required, a State Environmental Policy Act Checklist for new facilities or for modification of existing facilities.

   A baseline study in accordance with the requirements of Part O, paragraph 5.0.f on pre-operational environmental surveys may also be needed. This action should take place during the process leading up to the Conceptual Design Report (CDR). See also WHC-CM-6-12, "Projects Department Procedures," P-13, "Environmental Evaluation."

c. Coordinate with and obtain the assistance of Environmental Programs concerning National Pollutant Discharge Elimination (NPDES) permits, Prevention of Significant Deterioration (PSD) permits, Part A and Part B permits, and any other environmental permits that may be required. This should take place during the CDR stage to ensure enough time for accomplishing the necessary permit applications. Project engineers should be aware that obtaining necessary permits is not a trivial exercise. The process involves generating and submitting a permit application to a regulatory agency, review by the agency, possible revisions requested by the agency, and permit writing by the agency listing the operating parameters of the facility. Cost and schedule may be impacted if adequate consideration is not given to this process by the project engineer.

d. Obtain a Cultural Resource Clearance for any excavation or disturbance of land as defined in Part W, "Historical Site Preservation."

e. Transport and dispose of all nonradioactive solid wastes resulting from construction activities at the Hanford Landfill.

f. Obtain the review of Environmental Assurance for new facility designs, design modifications, and startup plans to ensure that environmental concerns have been adequately addressed and resolved. This review shall be limited to Impact Level 1, 2, and 3 documents

2. Environmental Engineering and Technology shall:

a. Assist project management in the preparation of permit request and National Environmental Policy Act (NEPA) documentation

b. Approve local, state, and federal permit applications

c. Provide notification of start-up to the EPA and the Benton, Franklin, Walla Walla Counties Air Pollution Control Authorization (the Authority) of a new facility that is a source of air pollution. This notification is a two-step process which includes:

- The anticipated date of initial start-up of the source at least 100 days prior to such date
- A notification of the actual date of initial start-up of the source within 15 days after such date.

3. Environmental Assurance shall review new facility designs, design modifications, and startup plans.

4.0 ENVIRONMENTAL DESIGN AND CONSTRUCTION REQUIREMENTS

1. Determination of Need for an Environmental Evaluation, Environmental Assessment, or Impact Statement

The initial step in the environmental process for new facility construction or modification of an existing facility is to determine what form of NEPA document is required. The WHC point-of-contact is the Environmental Engineering and Technology.

The DOE-RL authority to make NEPA determinations of appropriate level of documentation only applies to those DOE-Headquarters (DOE-HQ) Program sponsors (Assistant Secretaries) that have delegated that authority to Managers of Field Offices. Specifically, Defense Projects, Management and Administration and Fossil Energy have delegated the authority. All others, including Nuclear Energy and Energy Research, have kept authority.

For those programs that have not delegated to the Field Offices, all NEPA determinations must be done by the sponsor organizations (e.g., Nuclear Energy) with concurrence of Environmental and Health and General Council. The DOE-RL (and WHC) action would be to provide the sponsor organization with an Action Description Memorandum recommending the appropriate level of NEPA documentation.

For those programs that have delegated to the Field Office (e.g., Defense Projects), DOE-RL may do lower tier determinations (i.e., categorical exclusions, Memorandum-to-File). However, higher tier determinations (i.e., Environmental Assessment or Environmental Impact Statement) still must be resolved by the program sponsor with Environmental and Health and General Council. An Action Description Memorandum would be sent to the appropriate DOE-HQ sponsor recommending either an Environmental Assessment or an Environmental Impact Statement.

In DOE-RL, the Manager has delegated authority to the Assistant Manager for Safety, Environment and Security (AMS) who delegated to the Director of Safety and Environment.

Basis: The requirements for and the process of complying with the National Environmental Policy Act (NEPA) are found at DOE-RL Order 5440.1A, "Implementation of the National Environmental Policy Act at the Richland Operations Office."

2. Liquid Effluents

Requirements for new facilities or modifications to existing facilities relating to water discharges are summarized below:

a. New and modified facilities shall utilize Best Available Technology (BAT) as defined in WHC-EP-0137.

Basis: WHC Environmental Division policy reflecting the substantive requirements of WAC 173-216.

b. Nonradioactive liquid waste discharges from facilities shall be minimized and not exceed the limits in Part E of this manual.

Basis: See the basis for Part E, paragraphs 5.0 through 11.0.

c. Radioactive liquid waste discharges from facilities shall be minimized and not exceed the limits in Part F of this manual.

Basis: See the basis for Part F, paragraphs 4.0 through 10.0.

d. Discharges of nonradioactive regulated substances to the Columbia River require that a NPDES permit be obtained prior to start up.

Basis: This requirement is from 40 CFR 122.1(b).

e. When economically feasible preference shall be given to discharges to the Columbia river instead of discharges to the soil when designing new facilities.

Basis: WHC Environmental Division policy developed to protect the ground water. In general, the waste assimilative capacity of a river, such as the Columbia, is much greater than the less mobile ground water.

f. Discharges of liquid effluents to the soil column shall be permittable under WAC 173-216. Modified sources shall be upgraded to include BAT in accordance with the "Plan and Schedule to Discontinue disposal of Contaminated Liquids into the Soil Column at the Hanford Site," DOE-RL, March 1987, for the purpose of meeting the substantive requirement of WAC 173-216. The goal of BAT installation is to eliminate the discharge of contaminated liquid waste to the soil column.

Basis: Westinghouse Environmental Divison Position for responding to the intent of WAC 173-216.

3. Gaseous Effluents

Airborne emissions from new or modified facilities shall meet the following requirements:

a. If nonradioactive airborne emissions exceed significant levels set in 40 CFR 52.21, "Best Available Control Technology (BACT)" shall be used and a PSD application shall be submitted. These levels are:

(1) Carbon monoxide: 100 Tpy*
(2) Nitrogen oxides: 40 Tpy
(3) Sulfur dioxide: 40 Tpy
(4) Particulate matter: 25 Tpy
(5) Ozone: 40 Tpy of volatile organic compounds
(6) Lead: 0.6 Tpy
(7) Asbestos: 0.007 Tpy
(8) Beryllium: 0.0004 Tpy
(9) Mercury: 0.1 Tpy
(10) Vinyl chloride: 1 Tpy
(11) Fluorides: 3 Tpy
(12) Sulfuric acid mist: 7 Tpy
(13) Hydrogen sulfide: 10 Tpy
(14) Total reduced sulfur (including H_2S): 10 Tpy
(15) Reduced sulfur compounds (including H_2S): 10 Tpy
(16) Arsenic: any amount
(17) Benzene: any amount
(18) Radionuclides: any amount

Basis: This requirement is from 40 CFR 52.21.

b. Dust generation caused by construction or operational activities shall be minimized to meet the requirements contained in Part C of this manual, Table C-1.

Basis: This requirement is from 40 CFR 52.21.

New and modified sources shall be designed to meet the requirements of Part D, paragraph 5.0.b.1, during normal operations. In the event that new source radionuclide emission projections do not meet the requirements of Part D, paragraph 5.0.b.1, Project Management shall submit the ALARA evaluation used to determine the effluent treatment system for the new source and the projected facility emissions to Regulatory Compliance for review. Environmental Assurance may grant a specific annual administrative control value for this facility based on ALARA and external regulatory concerns.

Basis: See Part D, paragraph 5.0.b.1.

*Note: tons per year (Tpy).

4. Solid Waste Requirements

Solid wastes generated during the construction of new or modified facilities shall meet the following requirements:

a. Nonradioactive nondangerous solid wastes shall be disposed of at the Central Landfill in accordance with the requirements contained in Part G.

b. Radioactive solid wastes are covered by Part H.

c. Dangerous wastes are governed by Part I.

d. Radioactive mixed solid wastes have special requirements covered in Part J.

Basis: See the referenced Parts for the technical basis.

5. Final Facility Permits (Part B Permits).

All new and modified TSD facilities must obtain a final facility (Part B) permit from the State of Washington. Physical construction cannot start until a finally effective RCRA permit has been received. The contents of a Part B permit application are outlined in WAC 173-303-806. The information and data requirements of a Part B permit application are extensive and include a detailed description of the facility, geological data, training programs, and closure plan. For new facilities a notice of intent to submit an application must be filed.

Basis: Reflects the requirements found at WAC 173-303-806 and 173-303-281.

5.0 REFERENCES

1. DOE-RL Order 5440.1A, "Implementation of the National Environmental Policy Act at the Richland Operations Office."

2. 40 CFR 52, "Approval and Promulgation of Implementation Plans."

3. 40 CFR 122, "EPA Administered Permit Programs: The National Pollutant Discharge Elimination System."

4. WAC 173-216, "State Waste Discharge Permit Program."

5. WAC 173-303, "Dangerous Waste Regulations."

6. WHC-EP-0137, Best Available Technology (BAT) Guidance Document.

TITLE:

HISTORICAL SITE PRESERVATION

Approved by

R. E. Lerch, Manager
Environmental Division

1.0 PURPOSE

The purpose of Part W is to establish the requirements for the preservation of historical sites and cultural resources in connection with WHC activities.

2.0 SCOPE

The provisions of this part apply to any excavation or disturbance of land greater than 5.0 ft^2 in area. This 5.0 ft^2 exclusion does not apply to areas within 400 meters of the Columbia River, or land generally comprising Gable Mountain, Gable Butte, Rattlesnake Mountain or Rattlesnake Springs. Any disturbance of the land in these areas requires a Cultural Resource Clearance (CRC), as described in paragraph 4.0, below. No area of the Hanford Site is excluded from this review.

3.0 RESPONSIBILITIES

Each user of land (includes facility managers, project engineers, or cognizant engineers) shall:

1. Determine the exact location and dimensions of the excavation

2. Submit the form, Figure W-1, Request for Cultural Resources Review, accompanied by a map identifying the area to be disturbed. This information shall be submitted to the Manager, Cultural Resources Project, 375-6873, MSIN K5-09.

4.0 REQUIREMENTS

The following requirements shall be met:

1. Disturbance includes, but is not limited to, leveling, road or utility line construction, excavation of pits, foundations and trenches, quarrying and borrow of rocks and soils, seismic testing, and stockpiling of earth. In general, any activity requiring an excavation permit shall be reviewed.

2. Submission of formal requests may be preceded by a phone call; however, 60 days lead time shall be required. Excavation shall not proceed without this approval.

3. Variances or waivers to this process may be granted. All such requests shall be directed to Manager, Cultural Resources Project, Office of Hanford Environment, Pacific Northwest Laboratory.

4. No areas are exempted from the provisions of this Part. Highly industrialized areas may only be waivered on a case-by-case basis.

5. Emergency repair work, for emergencies as defined in WHC-CM-4-1, WHC Emergency Plan, may proceed without first having a CRC. A CRC shall be obtained after the fact.

Basis: 1. Letter, July 10, 1987, A. J. Rizzo (DOE-RL) to W. M. Jacobi, et.al., "Cultural Resource Review Process."

2. Internal Letter November 3, 1987, M. T. Black to J. M. Atwood, et.al., "Cultural Resource Review."

5.0 REFERENCES

1. WHC-CM-4-1, WHC Emergency Plan.

Figure W-1. Request for Cultural Resources Reviews.

REQUEST FOR CULTURAL RESOURCES REVIEW	HCRC #

Project Name

Requesting Organization and Division

Submitter (Name, Address, and Telephone)

Date of Request | Date Findings Requested By

Primary Contact Person — Phone

Secondary (If primary not available) — Phone

Project Development Stage: ☐ Site Selection ☐ CDR ☐ Construction ☐ Not Applicable

Project Description (narrative may be attached)

Project Dimensions

Depth of Excavation ☐ Not Applicable

Location of Project: ☐ 100 Area ☐ 200 Area ☐ 300 Area ☐ 400 Area ☐ 600 Area
☐ 700 Area ☐ 1100 Area ☐ 3000 Area ☐ Other _____

Maps Enclosed:
☐ USGS tape showing project location (or other suitable map to assist in finding the project site)
☐ Scale drawing showing construction, parking, topsoil storage areas, equipment stockpiles, (including water, sewer and power lines, etc), access roads and utility corridors.
☐ Other

Minimum Clearance Required: ☐ 0 ☐ 5 ☐ 3

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TITLE:
CONSIDERATION OF PROTECTED WILDLIFE, ENDANGERED SPECIES, AND INTRODUCTION OF EXOTIC SPECIES

Approved by
R. E. Lerch, Manager
Environmental Division

1.0 PURPOSE

The purpose of Part X is to establish standards for the treatment, handling, and disposition of protected wildlife and endangered and exotic species on the Hanford Site by WHC employees.

2.0 SCOPE

The provisions of this part apply to:

1. The taking* of any animal, or part thereof, living or dead, on the Hanford Site, whether or not such taking is done within the normal performance of work.

2. Modifications of habitat which adversely affect endangered or protected species.

3. Introduction of exotic species of plants or animals to the Hanford Site.

3.0 RESPONSIBILITIES

1. Operations/project managers shall:

   a. Assess the potential of their project/operations for damage to species protected under this part. For new projects, such consideration should be taken as part of the environmental document appended to the Conceptual Design Report (CDR).

   b. Take all reasonable measures to conserve and preserve existing habitat not withstanding that there are no Federal-listed plant species and none of the state-listed plant species are legally afforded protection.

   c. Investigate, evaluate, and control the impact of exotic plant or animal species on Site environs. This includes organisms introduced for the purposes of soil stabilization/revegetation, or pest control. Additional documentation may be required under the NEPA. See Part Q of this manual.

*Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap,

2. Employees of WHC, during the conduct of their duties, shall notify the Manager, Environmental Protection or Patrol, of any protected or threatened, and endangered animal or plant listed in Table X-1 found dead on the Hanford Site.

3. Environmental Protection shall be responsible for proper notification regarding taking of wildlife protected under this Part to designated state or Federal agencies.

4.0 REQUIREMENTS

1. No employee of WHC shall:

a. Take or otherwise reduce to possession any plant or animal species, or part thereof.

Basis: WAC 232-12-274, "Wildlife Code of the State of Washington."

b. Take or otherwise reduce to possession any wildlife species without appropriate Federal and/or state permits or approvals authorizing such activity and have the actual need to perform such activity as part of the employee's job assignment.

Basis: WAC 232-12-274, "Wildlife Code of the State of Washington."

c. Cut any tree or modify any habitat used by wildlife prior to filing a workplan with and obtaining approval from Environmental Protection. Environmental Protection will determine if the planned work is compatible with 16 USC 1531 before giving approval. See Parts O and Q of this manual.

Basis: The reference for this requirement is 16 USC 1531, "Endangered Species Act of 1973.

d. Release on the Hanford Site any exotic species of plant or animal, including domestic species, for any purpose without specific approval from Environmental Protection.

Basis: This requirement is from EO 11987, "Exotic Organisms," May 24, 1971.

5.0 REFERENCES

1. Executive Order 11987, "Exotic Organisms."

2. 16 USC 1531, "Endangered Species Act of 1973."

3. WAC 232-12-274, "Wildlife Code of the State of Washington."

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 1 of 7)

Taxa	Status[a]	Relationship to the Hanford Site
Washington State Status of Special Bird Species		
Birds associated with the Hanford Reach of the Columbia River but not known to nest on the Hanford Site		
Bald Eagle Haliaeetus leucocephalus	ST FT	A regular winter visitor to the Columbia River on the Hanford Site. Occasional forager of sagebrush/grass habitat.
American White Pelican Pelecanus erythrohynchus	SE	A regular fall and winter visitor to the Columbia River on the Hanford Site.
Black-Crowned Night Heron Nycticorax nycticorax	PM	A migrant and occasional forager along the Columbia River and at waste ponds on the Hanford Site.
Horned Grebe Podiceps auritus	PM	A common migrant along the Hanford reach of the Columbia River; occasional visitor to waste ponds.
Red-necked Grebe Podiceps grisegena	PM	Uncommon migrant along the Hanford reach of the Columbia River.
Western Grebe Aechmophorus occidentalis	PM	Common migrant along the Hanford reach of the Columbia River.
Clark's Grebe Aechmophorus clarkii	PM	Common migrant along the Hanford reach of the Columbia River.
Trumpeter Swan Cygnus buccinator	PM	Uncommon migrant along the Hanford reach of the Columbia River.
Aleutian Canada Goose Branta canadensis leucopareia	SE FE	Rare migrant and winter resident along the Columbia River; likely occurs along the Hanford Reach.
Osprey Pandion haliaetus	PM	Common visitor to the Hanford Reach of the Columbia River; no nesting records for the Hanford Site.

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 2 of 7)

Taxa	Status[a]	Relationship to the Hanford Site
Peregrine Falcon Falco peregrinus	SE FE	Migrant and winter resident along the Columbia River; several sightings along the Hanford Reach.
Black-necked stilt Himantopus mexicanus	PM	Uncommon migrant along the Hanford reach of the Columbia River and waste ponds.
Caspian tern Sterna caspia	PM	Common migrant and summer resident along the Hanford Reach of the Columbia River.
Arctic tern Sterna paradisaea	PM	Rare migrant along the Hanford Reach of the Columbia River.
Black tern Chlidonias niger	PM	Uncommon migrant along the Hanford Reach of the Columbia River.
Birds associated with the Hanford Reach of the Columbia River that also nest on the Hanford Site		
Great Blue Heron Ardea herodias	PM	Nests in trees along the Columbia River; Forages along the river and occasionally at waste ponds; a year-round resident.
Common Loon Gavia immer	PT	Infrequent nester along the Columbia River on the Hanford site; common - migrant and winter resident.
Great Egret Casmerodius albus	PM	Infrequently nests with Great blue Herons on the Hanford Site.
Forster's Tern Sterna forsteri	PM	Common nesting species along the Columbia River of the Hanford Site.
Birds Associated with Sagebrush/Grass Habitats		
Ferruginous Hawk Buteo regiis	ST FC	Occasional forager and nester on the Hanford Site.

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 3 of 7)

Taxa	Status[a]	Relationship to the Hanford Site
Swainson's Hawk Buteo swainsoni	PS FC	Common forager and nester on the Hanford Site.
Prairie Falcon Falco mexicanus	PM	Common forager and nester on the Hanford Site.
Turkey vulture Cathartes aura	PM	Uncommon migrant and summer resident on the Hanford Site.
Northern goshawk Accipiter gentilis	PS	Common fall and winter visitor to riparian habitats on the Hanford Site.
Golden eagle Aquila chrysaetos	PS	Common migrant and resident on the Hanford Site. No records of nesting.
Merlin Falco columbarius	PM	Uncommon migrant on the Hanford Site.
Gyfalcon Falco rusticolus	PM	Uncommon migrant and winter visitor to the Hanford Site; most observations from the ALE Reserve.
Sage Grouse Centrocercus urophasianus	PS	Uncommon resident on the Hanford Site. Adults and broods have been observed on the Arid Lands Ecology Reserve; a lek was present on the USF&W Saddle Mt. refuge prior to 1985.
Sandhill Crane Grus canadensis	SE	A common migrant across the Hanford Site. Rarely observed stopping over on the Hanford Site.
Long-billed Curlew Numenius americanus	PM FC	A common forager and nester in Sagebrush/grass habitats.
Flammulated Owl Otus flammeolus	PS	A rare migrant on the Hanford Site; one observation on the ALE reserve.
Snowy Owl Nyctea scandiaca	PM	A rare migrant on the Hanford Site; several observations.
Burrowing Owl	PS	A common forager and nester in

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 4 of 7)

Taxa	Status[a]	Relationship to the Hanford Site
Lewis' woodpecker Melanerpes lewis	PS	A rare migrant on the Hanford Site.
Mammals associated with the Hanford Site		
Merriam's shrew Sorex merriami	PS	Uncommon inhabitant of upper elevations of Rattlesnake mountain of the ALE Reserve.
Pallid Bat Antrozous palliuds	PM	Inhabits deserted buildings and cliffs on the Hanford Site.
Pygmy Rabbit sylvilagus idahoensis	PE	Prior to the 1984 fire, this small rabbit occurred on Rattlesnake Mountain on the ALE Reserve. No records of occurrence since 1984.
Northern Grasshopper Mouse Onychomys leucogaster	PM	Common in Sagebrush/grass habitats on the Hanford Site; particularly abundant on the ALE Reserve.
Sagebrush Vole Lagurus curtatus	PM	Common at higher elevation on Rattlesnake Mountain on the ALE Reserve. Found mostly in bunchgrass dominated habitats.
Reptiles and Amphibians of the Hanford Site		
Woodhouse's toad Bufo woodhousei	PM	Uncommon along the Hanford Reach of the Columbia River and riparian areas of the ALE Reserve.
Night Snake Hypsiglena torquata	PM	Common around basalt outcroppings on the Hanford Site.
Striped whipsnake Masticophis taeniatus	PS	Uncommon in Sagebrush/grass habitats where lizards (their chief food) are not abundant.

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 5 of 7)

Taxa	Status[a]	Relationship to the Hanford Site
Invertebrates of the Hanford Site		
Columbia River Limpet *Lanx nuttalli*	PM	Common inhabitant of the Hanford Reach of the Columbia River.
Columbia River Spire Snail *Lithoglyphus columbiana*	PM	Common inhabitant of the Hanford Reach of the Columbia River.
Short-tailed black swallowtail *Papilio indra*	PM	Inhabits most of the Hanford Site.
Fish of the Hanford Reach of the Columbia River		
Mountain Sucker *Catostomus platyrhynchus*	PM	Uncommon inhabitant of the Hanford Reach of the Columbia River.
Sand Roller *Percopsis transmontana*	PM	Common inhabitant of Pool areas of Hanford Reach.
Piute Sculpin *Cottus beldingi*	PM	Abundant inhabitant of riffle and cobble areas of the Hanford Reach.
Reticulate Sculpin *Cottus perplexus*	PM	Uncommon habitat of the Hanford Reach of the Columbia River.
Endangered, Threatened, and Sensitive Plants on the Hanford Site[b]		
Columbia Milk-Vetch *Astragalus columbianus* Barneby	Threatened C	A local endemic with its major populations located on the Yakima Firing Center; small populations also exist on the Hanford boundary adjacent to the Firing Center.
Persistentsepal Yellowcress *Rorippa columbiae* Suskd. ex Howell	Endangered C	Known to occur on the wetted shoreline of the Columbia River on the Hanford site; not likely to occur elsewhere.

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 6 of 7)

Taxa	Status[a]	Relationship to the Hanford Site
Thompson's Sandwort Arenaria franklinii Doug. var. Thompsonii Peck	Threatened	Exists as A. franklinii on stabilized sand dunes on the Hanford Site; taxonomic status is currently under consideration.
Hoover's Desert Parsley Lomatium tuberosum Hoover	Threatened C	A local endemic in Yakima, Benton, Grant, and Kittitas Counties; not known from the Hanford Site.
Gray Cryptantha Cryptantha leucophea Dougl. Pays	Sensitive	Occurs on stabilized sand dunes of the Hanford Site near the WYE barricade; occurrence in other areas has not been established.
Piper's Daisy Erigeron piperianus Cronq.	Sensitive	A local endemic, occurs on the Arid Lands Ecology Reserve; occurrence in other areas has not been established.
Tooth-Sepal Dodder Cuscuta denticulata Englem.	Monitor	Recently found in Benton County; parasitic on sagebrush; may occur in the vicinity of the Hanford Site.

Reference[a] Definitions of special classifications of animal species:

FE--Federally designated endangered species.
FT--Federally designated threatened species.
FC--Federally designated candidate species.

PE--Proposed Endangered. A species proposed for consideration for State Endangered classification.

PM--Proposed Monitor. A species proposed for State Monitor classification.

PS--Proposed Sensitive. A species proposed for consideration for State Sensitive classification.

PT--Proposed Threatened. A species proposed for consideration for State Threatened classification.

Table X-1. Endangered, Threatened, and Sensitive Animals on the Hanford Site. (Sheet 7 of 7)

SE--State Endangered. A species which is seriously threatened with extirpation within the State of Washington. These are classified by the State Game Commission as endangered wildlife (WAC 232-12-014). Protected from taking due to damage (RCW 77.12.265); trafficking (RCW 77.16.040); and possession, control, or destruction of nests or eggs (RCW 77.16.120).

SM--State Monitor. A species of special interest because of public appeal, need for special habitats during a portion of their life cycle, status as indicators of environmental quality, population status that is mostly unknown, taxonomic status in need of further study, or justifiably removed from Endangered, Threatened, or Sensitive classification.

SS--State Sensitive. A species that could become threatened if current water, land, and environmental practices continue. Classification by the State Game Commission as Protected Wildlife and protected from possession, control, or destruction of nests or eggs.

ST--State Threatened. A species that could become endangered without management or removal of threats. These species are classified by the State Game Commission as Protected Wildlife (WAC 232-12-011). Protected from possession, control, or destruction of nests or eggs (RCW 77.16.120).

Reference[b] Definitions of special classifications of plant species:

Endangered. A vascular plant taxon in danger of becoming extinct or extirpated in Washington within the near future if factors contributing to its decline continue. These are taxa whose populations are at critically low levels or whose habitats have been degraded or depleted to a significant degree.

Local Endemic. A taxon restricted to a limited geographical area, usually with a single county or several adjacent counties.

Monitor. A vascular plant taxon of potential concern because of uncertain taxonomic status or paucity of information concerning distribution; or a taxon that is actually more abundant or less threatened than previously thought.

Sensitive. A vascular plant taxon, with small populations or localized distribution within the state, that is not presently endangered or threatened, but whose populations and habitats will be jeopardized if current land use practices continue.

Threatened. A vascular plant taxon likely to become endangered within the near future in Washington if factors contributing to its population decline or habitat degradation or loss continue.

TITLE:

ASBESTOS AND POLYCHLORINATED BIPHENYLS

Approved by

A E Lerch 7-17-87

R. E. Lerch, Manager
Environmental Division

1.0 PURPOSE

The purpose of this Part is to establish WHC standards for asbestos and polychlorinated biphenyls (PCBs) on the Hanford Site. These standards are intended to ensure that WHC personnel control, handle, and dispose of these materials in a manner that:

1. Protects the safety of employees and the general public.

2. Minimizes spills and releases to the environment.

3. Meets applicable DOE, Federal, state, and local regulatory requirements.

2.0 SCOPE

1. Asbestos

This part applies to the removal of asbestos from facilities and facility components and the subsequent disposal of the asbestos. This part complements WHC-CM-4-3, "Industrial Safety Standards," Standard C-3, "Asbestos Control," which covers the safety aspects of asbestos removal.

2. PCBs

The responsibilities and requirements of this part apply to the following radioactive and nonradioactive equipment and materials containing two (2) parts per million (ppm) PCBs* or more.

a. Hydraulic and heat transfer systems
b. Materials (rags, debris, soil, etc.)
c. Transformers, capacitors, and other electrical equipment
d. Waste oils.

*Two (2) ppm using ASTM method D-4059-86 or one (1) ppm using EPA method 60/4-81-045.

The requirements of this part are intended to supplement WHC-CM-4-3, Industrial Safety Standards, Standard C-1, "Polychlorinated Biphenyls (PCB)" which is concerned with the control of employee exposure to PCBs.

3.0 RESPONSIBILITIES

1. Building Managers and Operations Managers shall:

   a. Ensure that all waste asbestos materials are removed, handled, packaged, labeled, stored and disposed of in compliance with the requirements of this standard.

   b. Maintain the necessary inventory, storage, clean up, and disposal records for waste asbestos materials and items and materials containing PCB.

   c. Ensure that personnel handling asbestos materials and PCB items and materials containing PCB have received proper training.

   d. Ensure that all items and materials containing PCB within their facility or cognizance are handled and controlled in accordance with the requirements of this part.

   e. Ensure that all new oils and electrical items used are certified free of PCB.

   f. Promptly take the following actions in the event of any spill or release of PCBs:

      (1) Environmental Protection shall be immediately notified.

      (2) Any leak to electrical equipment that requires equipment inspection and/or repair shall be immediately reported to Electrical Utilities.

2. Industrial Safety and Fire Protection shall:

   a. Establish safety policies for handling asbestos materials and PCB items and materials.

   b. Overview removal, handling, packaging, labeling, storing, and disposal of radioactive and non-radioactive asbestos materials.

3. Solid Waste Engineering shall:

   a. Maintain asbestos disposal records for the Hanford Site.

b. Issue a quarterly report that summarizes disposal of non-radioactive asbestos on the Hanford Site and forecasts disposal quantities for the next calendar year.

c. Prepare and submit to DOE-RL the annual radioactive PCB status report for the Hanford Site by June 1.

d. Provide spill designations for PCB releases.

e. Provide "Chemical Waste Disposal Analysis" designating PCB wastes and coordinating disposal.

f. Provide assistance and direction for containment and remediation of PCB spills.

4. Electrical Utilities shall:

a. Ensure that all items and materials containing PCB under their cognizance are handled, controlled, and disposed of in accordance with the requirements of this part.

b. Provide approved storage for items and materials containing PCB.

c. Maintain a data base for Site-wide inventory, inspection, storage, and disposal records for PCB items and materials containing PCB.

d. Maintain an updated registration of all PCB transformers with the Hanford Fire Department and responsible building managers.

e. Prepare and submit to DOE-RL by June 1 the annual non-radioactive PCB status report for the Hanford Site.

f. Provide timely maintenance and repair of leaks in PCB and PCB-contaminated transformers in accordance with applicable state and federal regulations.

g. Provide spill control and cleanup services in response to PCB spills that require corrective actions beyond the abilities and responsibilities of the operating facilities.

h. Notify Environmental Protection of any spill or release of materials that contain PCB.

i. Provide support to Hanford Site PCB Task Force.

5. Site Support shall provide environmental training for personnel handling asbestos and PCBs.

6. Regulatory Compliance shall:

   a. Establish standards necessary to ensure that WHC facilities and equipment are in compliance with applicable DOE and Federal regulations.

   b. Provide support to the Hanford Site PCB Task Force.

7. Environmental Assurance shall:

   a. Assist building managers, operating managers, and support personnel in implementing and meeting the requirements of this part. Notify the Area or Building Emergency Director if the spill represents an exposure risk or release to the environment.

   b. Investigate spills or releases of PCB and file the necessary reports.

   c. Overview cleanup of spills or releases of PCB.

   d. Overview storage and disposal of PCB items and materials.

   e. Provide support to the Hanford Site PCB Task Force.

4.0 REQUIREMENTS

4.1 GENERAL REQUIREMENTS FOR WASTE ASBESTOS MATERIALS

Environmental requirements concerning handling and disposal of asbestos materials are based on the ability of the material to become airborne. Asbestos materials are divided into two general categories: friable asbestos and non-friable asbestos. Friable asbestos is defined as material containing more than 1% asbestos by weight that hand pressure can crumble, pulverize, or reduce to powder when dry. If not handled properly fibers of friable asbestos can become airborne, resulting in a potential hazard to personnel and a potential release to the environment.

Basis: See the definition for "asbestos-containing waste materials" and "friable asbestos" at 40 CFR 61.141.

Asbestos materials must also be controlled according to whether the material is radioactive or non-radioactive. The following requirements apply to handling, packaging, storing, and disposing of radioactive and non-radioactive asbestos materials on the Hanford Site.

1. All work involving removing, handling, packaging, labeling and storing asbestos materials shall be conducted in accordance with the requirements of WHC-CM-4-3, Industrial Safety Manual, Standard C-3, "Asbestos Control."

2. All work involving removal, handling, packaging, labeling, storing, and disposing of friable asbestos shall be controlled to prevent any visible release of asbestos fibers to the environment. This may be accomplished by the use of water sprays, ventilation filtration equipment, proper packaging techniques, and other means of controlling airborne particulate materials.

3. All non-radioactive waste asbestos materials (including friable and non-friable forms) shall be disposed of in accordance with the requirements contained in Part G of this manual and Fleet Operations, Transportation and Maintenance Management Standard Operating Procedure 25.2, "Disposal of Asbestos at Central Landfill."

4. All radioactive waste asbestos materials (including friable and non-friable forms) shall be disposed of in accordance with the requirements contained in Part H of this manual and WHC-EP-0063, Hanford Radioactive Solid Waste Packaging, Storage, and Disposal Requirements.

Basis: The requirements in 1 through 4, above, reflect the requirements at 40 CFR 61.145, 146, 147, 152, 154, 155, and 156, and DOE-RL Order 5480.10A.

4.2 GENERAL REQUIREMENTS FOR ITEMS AND MATERIALS CONTAINING PCB

Items and materials containing Polychlorinated Biphenyls (PCB) are regulated under 40 CFR 761. The following definitions will be used to describe the regulatory limits for PCB items and materials on the Hanford Site.

PCB Materials. PCB materials include oils, liquids, rags, absorbent materials, etc. that contain PCB in concentrations of 2 ppm (or 1 ppm depending on test method) or greater.

PCB-Contaminated Items. PCB-contaminated items include transformers, circuit breakers, switch-gear, reclosers, voltage regulators, etc. that contain PCB in concentrations of 50 ppm or greater but less than 500 ppm. Mineral oil transformers that have never been sampled for PCB are classified as "PCB-contaminated" until further testing is completed.

PCB Container. Any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB articles and whose surface(s) has been in direct contact with PCBs.

PCB Items. PCB items include electrical equipment (transformers, rectifiers, switch-gear, capacitors, light ballasts, etc.) that contain PCB in concentrations of 500 ppm or greater.

The following requirements apply to using, handling, packaging, storing, and disposing of materials and items containing regulated concentrations of PCB.

1. The following equipment, materials, and locations shall be clearly labeled with the large (6" x 6") PCB ML label. Where the PCB item is too small to accommodate the large ML label, a smaller PCB ML label may be used.

   a. All drums containing PCBs.

   b. All hydraulic and heat transfer systems containing 50 ppm or greater PCB.

   c. All PCB transformers.

   d. All PCB large (containing three pounds or more of dielectric fluid) capacitors at the time of removal from service.

   e. All vehicles used to transport more than 45 Kg (99.4 lbs) of PCB materials or one or more PCB transformers (labeled on all four sides).

   f. All PCB storage areas including temporary storage.

   g. All doors, fences, hallways, or means of entrance (excluding grates and manhole covers) to a PCB transformer.

   Basis: These requirements reflect the requirements found at 40 CFR 761.40.

2. The following conditions and PCB items are prohibited on the Hanford Site.

   a. PCB transformers and large capacitors in a location that poses an exposure risk to food and feed.

   b. Hydraulic and heat transfer systems with fluids that contain 50 ppm PCB or greater.

c. Large capacitors (both high and low voltage), unless they are located in a restricted-access electrical substation or a restricted-access indoor installation that provides spill containment.

d. Combustible materials located within 5 meters of a PCB transformer or PCB transformer enclosure.

e. The installation of a PCB transformer in or within 30 meters of a commercial building or onsite office building.

Basis: These requirements reflect the requirements found at 40 CFR 761.30(a).

3. All hydraulic and heat transfer systems containing greater than 2 quarts fluid that have not been replaced or flushed since January 1983 shall be tested for PCB.

Basis: This requirement reflects the requirement found at 40 CFR 761.30(d) and (e). The "2 quarts" threshold is based on small hydraulic systems, as found on vehicles, which would be changed every year as part of the vehicle preventive maintenance and would not have to be tested because after January 1, 1983 no more PCB fluids would be purchased.

4. All PCB transformers shall be registered with the Hanford Fire Department and the cognizant Area or Building Administrator. The following information shall be included in the registration.

a. The address and physical location of the transformer(s).

b. The principal constituent of the dielectric fluid in the transformer(s).

c. The type of transformer installation(s).

d. The name and telephone number of the person to contact in the event of a fire involving the equipment.

Basis: These requirements reflect the requirements found at 40 CFR 761.30(a)(1)(vi).

5. Copies of the inspection forms for the following are to be forwarded to Electrical Utilities and Environmental Protection for transformers at 165-KE and KW and 105-KE and KW, and rectifiers at 189-D.

a. PCB transformers with risk reduction measures (containing less than 60,000 ppm PCB and/or provided with spill containment) shall be visually inspected at least annually.

b. All PCB transformers without risk reduction measures shall be visually inspected at least once every three months. There shall be a minimum of 30 days between each inspection.

Basis: These requirements reflect the requirements found at 40 CFR 761.30(a)(1)(xiii).

6. The following permanent corrective actions shall be completed in response to a spill or leak of PCB.

a. All visible traces of the spilled material shall be removed.

b. Depending on the location of the leak and the concentration of the spilled material, different cleanup procedures and a verification sample may be required. These requirements can be obtained from Electrical Utilities and/or Environmental Protection.

c. A cleanup certification sample shall be collected and analyzed to verify that residual PCB concentrations are below the levels determined in paragraph 6(b) above.

d. All discarded PCB items, PCB materials, and spent absorbent materials shall be packaged, labeled, and disposed in accordance with paragraph 4.3.

e. Follow-up inspections shall be conducted and documented by the equipment manager to ensure that the leaking equipment has been adequately repaired.

Basis: These requirements reflect the requirements found at 40 CFR 761.125.

7. The following records and reports are required.

a. Complete inventory of all PCB-contaminated and PCB items located on the Hanford Site.

b. Records of inspection and maintenance history for all PCB transformers. The records shall be maintained for at least three years after the equipment has been disposed and shall contain the following information.

(1) The location of the transformer.

(2) The date of each visible inspection and the name of the inspector.

(3) Information concerning any leaks or spills associated with the transformer. This information should include the date and location of the leak, an estimate of the spilled volume, and the date and description of any cleanup, containment, repair, or replacement.

c. An annual PCB report shall be prepared that includes the following information.

(1) The dates when PCB materials and PCB items were removed from service, placed into storage for disposal, and transported for disposal.

(2) The total quantities of PCB materials and PCB items removed from service, placed into storage for disposal, and transported for disposal.

(3) The location of the initial disposal or storage facility for PCB materials and PCB items removed from service.

(4) The total number of PCB transformers removed from service and remaining in service and the total weight of PCBs contained in them.

(5) PCB container contents identified.

(6) Total number of PCB capacitors removed from service and remaining in service.

Basis: The requirements in paragraphs 7.a and 7.c above reflect the requirements in 40 CFR 761.180. The requirements in paragraph 7.b above reflect the requirements in 40 CFR 761.30.

4.3 TEMPORARY STORAGE OF PCB MATERIALS AND PCB ITEMS

The following PCB items may be stored for up to 30 days in a temporary storage area, provided that a notation is attached to the PCB item or container indicating the date the item was removed from service:

1. Non-leaking PCB articles and PCB equipment.

2. Leaking PCB articles and PCB equipment if the PCB items are placed in a non-leaking PCB container that contains sufficient absorbent material to absorb any liquid PCBs remaining in the PCB items.

3. PCB containers containing non-liquid PCBs such as contaminated soil, rags, and debris.

4. PCB containers containing liquid PCBs at a concentration between 50 and 500 ppm, provided a Spill Prevention, Control and Countermeasure Plan (SPCC) has been prepared for the temporary storage area in accordance with 40 CFR 112. In addition, each container must bear a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB.

Basis: These requirements reflect the requirements found in 40 CFR 761.65(c)(1).

4.4 STORAGE FOR DISPOSAL FACILITIES

WHC operates a Storage For Disposal (SFD) Facility at 212-P Building located in the 200-N Area. The facility is managed and operated by Electrical Utilities. The SFD facility shall be operated in a manner that complies with the following requirements.

1. PCB materials, PCB-contaminated items, and PCB items may be stored at the SFD facility. No stored item or material shall remain in storage for more than 9 months from the date when it was first placed into storage, including temporary storage.

2. The facility shall have the following minimum design features.

   a. An adequate roof and walls to prevent rain water from reaching items and materials in storage.

   b. A continuous, smooth, impervious floor area that contains no drain valves, floor drains, expansion joints, sewer lines, or other openings that would allow release of liquids.

   c. Continuous, smooth, impervious curbing that is at least 6 inches in height and capable of containing two times the volume of the largest article in storage or 25% of the total volume in storage, whichever is greater.

   d. The SFD facility shall not be located on the 100-year flood plain.

   e. An up-to-date spill contingency plan or SPCC Plan.

Basis: These requirements reflect the requirements found at 40 CFR 761.65(b).

5.0 REFERENCES

1. DOE-RL Order 5480.10A, "Industrial Hygiene Program."

2. 40 CFR 61, Subpart M, "National Emission Standards for Asbestos."

3. 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution In Commerce, and Use Prohibitions."

4. WHC-CM-4-3, Industrial Safety Manual.
   Standard C-1, "Polychlorinated Biphenyls."
   Standard C-3, "Asbestos Control."

5. WHC-EP-0063, Hanford Radioactive Solid Waste Packaging, Storage, and Disposal Requirements.

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TITLE:

SURPLUS FACILITIES DECONTAMINATION AND DECOMMISSIONING

Approved by
R E Lerch 7-17-89
R. E. Lerch, Manager
Environmental Division

1.0 PURPOSE

The purpose of Part Z is to establish standards and guidelines for the management, decontamination, and decommissioning of new and surplus facilities under the control of WHC which are contaminated with radioactive and or dangerous wastes.

2.0 SCOPE

Facilities shall be subject to the provisions of this Part when they are declared surplus and have been accepted into a decommissioning program.

3.0 RESPONSIBILITIES

1. Facility Management shall:

   a. Maintain all surplus facilities under their jurisdiction in full compliance with the applicable parts of this manual.

   b. Provide routine surveillance and maintenance of surplus facilities to assure ongoing compliance.

2. The Environmental Restoration shall:

   a. Prioritize surplus facilities under their control for remedial action.

   b. Assure that plans and programs for decontamination and decommissioning (D&D) comply with all applicable standards in this manual.

   c. Coordinate the environmental review process for each facility undergoing D&D so that the status of that facility with regard to RCRA, CERCLA/SARA, NEPA, and State Regulations is understood.

   d. Conduct the decommissioning project in accordance with a project plan approved by DOE-RL. Deviations to the plan will require the same level of approval as the original.

e. Obtain approval to demolish a facility from DOE-RL in accordance with DOE Order 4300.1B, "Real Property and Site Development Plans."

f. Prepare report documenting radiological and hazardous materials status of the facility, including allowable residual contaminant level analyses, if applicable.

g. Prepare a post decommissioning final report.

h. Provide for long term surveillance and maintenance, when necessary.

i. Comply with the release criteria of Part K of this manual.

3. Quality Assurance shall:

a. Assure D&D activities are conducted consistent with WHC-CM-6-7, Environmental Restoration Quality Assurance Program Plan Manual.

b. Provide to the process described in paragraph 4.0 quality assurance elements for each activity, investigation, or project.

4. Project Management shall ensure that planning for facility decommissioning is considered during the Conceptual Design Report stage of a new or modified facility.

5. Safety shall:

a. Review and approve safety analysis documentation for decontamination and decommissioning activities as required.

b. Provide independent safety review to ensure that all necessary standards for industrial safety, industrial hygiene, fire protection, and radiological safety are observed.

4.0 GENERAL REQUIREMENTS

The requirements for decontaminating and decommissioning radioactively contaminated facilities are described in the DOE manual, "Defense Decontamination and Decommissioning Program Management Plan." This document identifies the activities required for the management, surveillance and maintenance, and decontamination and decommissioning of surplus facilities managed under the DOE Defense Program.

5.0 REFERENCES

1. DOE Order 4300.1B, "Real Property and Site Development Plans."

2. DOE Manual (unnumbered), "Defense Decontamination and Decommissioning Program Management Plan."

3. WHC-CM-6-7, Environmental Restoration Quality Assurance Program Plan Manual.

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TITLE:

MAXIMUM CONTAMINANT LEVELS

Approved by

R. E. Lerch, Manager
Environmental Division

APPENDIX B

1.0 PURPOSE

The purpose of this Appendix is to provide a listing of the maximum contaminant levels (MCLs) that are utilized as limits and thresholds by the requirements of this manual.

2.0 SCOPE

Maximum contaminant levels were derived for the purpose of establishing acceptable levels of pollutants in public drinking water systems. These levels were initially applied at the well head, and ensured that the community potable water would be safe for consumption by people of all age groups. After their original printing, the MCL values were utilized by several state and Federal laws and agencies as threshold levels in groundwater when determining unacceptable impact to the environment from industrial waste discharges to the soil. Other considerations are also necessary when determining acceptable impact to the environment from liquid effluent sources, and are taken into consideration in the text of this manual.

For the purposes of compliance with the requirements of this manual, the MCL values can be considered the point below which a liquid is no longer considered regulated and above which a liquid must be controlled as a regulated material.

3.0 PRIMARY MAXIMUM CONTAMINANT LEVELS

Arsenic	0.05	mg/l
Barium	1.0	mg/l
Cadmium	0.01	mg/l
Chromium	0.05	mg/l
Fluoride	2.0	mg/l
Lead	0.05	mg/l
Mercury	0.002	mg/l
Nitrate (as N)	10.0	mg/l
Selenium	0.01	mg/l
Silver	0.05	mg/l

Coliform Bacteria	1/100 ml	
Turbidity	1.0	Turbidity Unit

2,4-D	0.10	mg/l
Endrin	0.0002	mg/l
Lindane	0.004	mg/l
Methoxychlor	0.10	mg/l
Total Trihalomethanes	0.10	mg/l
Toxaphene	0.005	mg/l
2,4,5-TP	0.01	mg/l
Benezene	0.005	mg/l
Carbon Tetrachloride	0.005	mg/l
Para-dichlorobenzene	0.075	mg/l
1,2-dichloroethane	0.005	mg/l
1,1-dichloroethylene	0.007	mg/l
1,1,1-trichloroethane	0.2	mg/l
Trichloroethylene	0.005	mg/l
Vinyl Chloride	0.002	mg/l

Gross alpha particle activity (including radium-226, but excluding uranium)	15.0 pCi/l
Radium 226 and 228	5.0 pCi/l
Gross beta particle activity	4.0 mrem/year

4.0 SECONDARY MAXIMUM CONTAMINANT LEVELS

Chloride	250.0	mg/l
Color	15.0	units
Copper	1.0	mg/l
Iron	0.3	mg/l
Manganese	0.05	mg/l
Sulfate	250	mg/l
Total dissolved solids	500.0	mg/l
Zinc	5.0	mg/l

Specific conductivity	700.0	µmhos/cm
Foaming Agents	0.5	mg/l
Odor	3	Threshold odor number
Corrosivity	Non-Corrosive	
pH	6.5 - 8.5	

5.0 REFERENCES

1. WAC 248-54-175, "Maximum Contaminant Levels."

2. 40 CFR 141, "National Primary Drinking Water Regulations."

3. 40 CFR 143, "National Secondary Drinking Water Regulations."

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